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CLAIMS

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[The scope of a claim for utility model registration]

[Claim 1]An almost disc-like zenith part.

A cap body which becomes the inside diameter which hung from this zenith part from a tubed part which has a thread groove.

A locking piece of \*\*\*\* which connected a cylindrical member for a pilfer-proof packaging guarantee via a connecting member which was provided in a lower end part of this tubed part with a prescribed interval, and which is easy to fracture, and was formed in one toward the inside diameter side of this cylindrical member from the periphery of a lower end of that cylindrical member.

Are the above the pilferproof cap which it had and to both side surfaces of each of said locking piece. When protrusion formation of the inclined form side attachment wall in which it rises as it goes at a tip of a locking piece, and quantity becomes large is carried out in the direction which counters this cylindrical member and the length of the locking piece fits this cap into a bottle mouth part, This locking piece suited passing a stop protruding line part formed in a bottle, and a liquid passing hole was established in the center of a base of the locking piece.

[Claim 2]The pilferproof cap according to claim 1 carrying out suspension formation of the \*\*--like cylinder body in one while having been suitable for a regio-oralis inside diameter of a bottle in which this cap is applied in the center of the undersurface of a zenith part carrying out close fitting.

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[Translation done.]

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DETAILED DESCRIPTION

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[Detailed explanation of the device]

[0001]

[Industrial Application]

This design is related with the plastic cap which has what is called a pilfer-proof packaging function to guarantee that the cap of a container is not yet unstopped.

[0002]

[Description of the Prior Art]

Conventionally, as for the plastic cap of a container, the press fit method which used engagement with a screw and the elasticity of the plastic so that repeated use might be possible was taken. Thus, since that attachment and detachment of a cap are free did not have the function to guarantee an unopened thing, various problems had arisen. The cap which formed the pilfer-proof packaging mechanism in these days is developed, and it is appropriated for many use. For example, JP,57-9240,Y

It is publicly known in it being alike and an example of such a pilfer-proof packaging mechanism being shown. This has formed the tongue-shaped piece 33 straight to an inner direction in the guarantee department 32 provided via the jointing piece 31 under the cap body as shown in drawing 4. It is made for the jointing piece 31 to cut, without that tongue-shaped piece's engaging with the stop projected rim 34 of a package body neck, and the guarantee department 32 escaping from this cap 30, if it fits into the regio oralis of a container.

[0003]

JP,4-71649,U forms the ring 35 for a stop suitable for a cap inner side upper part in the lower part of the guarantee department 32 provided via the jointing piece 31 under the cap body 30, as shown in drawing 5. The projection 36 which becomes large [ a projection amount ] is formed as it goes for this ring 35 at a tip, the guarantee department 32 is prevented from this projection 36 making it engage with the stop projected rim 34 of a package body, and falling out, and it is made for the jointing piece 31 to cut.

[0004]

[Problem(s) to be Solved by the Device]

If JP,57-9240,Y forms the tongue-shaped piece 33 of a guarantee subordinate part in thin meat, capping nature is [ in / the above conventional pilferproof caps / that it is easy to bend inside the guarantee department 32 ] good but, and. It may be unstopped with a guarantee department, without the jointing piece 31 which the intensity of a tongue-shaped piece is not enough, and the tongue-shaped piece 33 is buckled at the time of unstopping, and connects a guarantee department and a cap body cutting. if thickness of a tongue-shaped piece is thickened in order to prevent such a thing, even if bending to the inside will bend strongly and will close difficult, this tongue-shaped piece is not stuck to the neck peripheral face of a container, but the both ends of a tongue-shaped piece stretch it, therefore the guarantee department 32 will present the shape which was square without becoming circular, and will spoil a fine sight.

[0005]

The suspending portion 35 is ring shape, and JP,4-71649,U has formed the projection 36 which becomes large [ a projection amount ] as it goes for the ring like part at a tip. Although it is

necessary to make it the length of the grade to which the projection amount is made as for sufficient stop for the stop projected rim 34 and intensity required to tear off the jointing piece which connects a guarantee department with a cap body by it at the time of unstopping is obtained. Conversely, when carrying out fitting insertion of the cap at a container, the inconvenience which cannot exceed easily the slip off stop stop projected rim 34 which the height provided in the neck of the package body, therefore makes the jointing piece 31 transform or fracture by the contact resistance at the time of capping produces this.

[0006]

After filling up a container with a drink, foodstuffs, etc., although a shower is quickly showered frequent for cooling or washing, the container eating-in-the-household article, In this case, for reasons of sanitation [ -- since cooling water collects inside the lower end bend part 37 of a pilferproof cap and it does not dry easily, adhesion propagation of saprophytic bacteria arises -- ], a problem will be left and it is just going to be considered as the problem. It was also one of the difficulties which the locking piece of the above-mentioned ring shape has.

[0007]

Although the outside of the flange of the package body in which said locking piece is engaged is almost constant, the diameter of the lower neck part may change with makers. When the diameter of this neck part 38 was small, according to the rise of a cap, the locking piece might slide on said flange undersurface, might fall on the neck peripheral face side, and might not have stop power, but the guarantee department might also drop out from the container mouth part with the cap body.

[0008]

[Means for Solving the Problem]

A cap body which consists of a zenith part in which this design is almost disc-like, and a tubed part which has a thread groove in an inside diameter which hung from this zenith part in order to solve the above problem, A cylindrical member for a pilfer-proof packaging guarantee was connected via a connecting member which was provided in a lower end edge of this tubed part with a prescribed interval and which is easy to fracture, and it had composition which forms in one a locking piece which has an inclined form side attachment wall of \*\*\*\* toward the inside diameter side of this cylindrical member from the periphery of a lower end of that cylindrical member. It is supposed that a grade of this locking piece settled between an inside diameter of a cylindrical member and an outer diameter of a stop projected rim formed in a bottle in which this cap fits in is thick, Rise as the inclined form side attachment wall goes at a tip near the inner direction end face of a locking piece, and quantity becomes large, It is almost the same as a projection amount from said neck to an outer diameter of a stop projected rim, and formed at an angle of 90 to 130 right and left to this locking piece, and the length of the locking piece consisted of the tip in a size which can pass said stop projected rim, when this cap fitted into a bottle mouth part thoroughly.

Many problems are solved by furthermore providing a liquid passing hole in the center of a refraction base of the locking piece etc.

[0009]

While fitting into a zenith part rear face of said cap at a caliber of a bottle, it made for liquid in a bottle to leak into structure to prevent by carrying out suspension formation of the \*\*-like cylinder.

[0010]

[Example]

The example of this design is described according to a drawing. This cap 1 is what consists of the zenith part 2 and the tubed part 3 which has a female screw in the inside diameter which hung from the periphery. Under the tubed part 3, via several connecting members 4 and 4 which are easy to fracture thinly The cylindrical member 5 for a pilfer-proof packaging guarantee, The locking pieces 6 and 6 of \*\*\*\* which has the inclined form side attachment walls 6a and 6a toward the inside diameter side of this cylindrical member from the periphery 5a of a lower end of the cylindrical member 5, and .. are formed with a plastic in one. When the flat-surface part of this locking piece 6 presupposes that the grade settled between the inside diameter of the

cylindrical member 5 and the outer diameter of the stop projected rim 11 formed in the bottle in which this cap fits in is thick and the length of this locking piece 6 fits in thoroughly [ this cap 1 / a bottle mouth part ], The inclined form side attachment wall 6a which is a size which can pass said stop projected rim 11, and was formed in the inside both side surfaces, 6a is highly formed as it goes at a tip near the base of this locking piece 6, and the height in the tip is almost comparable as the standup height from the neck 12 of the stop projected rim 11, and is formed at the angle of 90 to 130 right and left to the flat-surface part of the locking piece 6. The opening of 6 h of the through-holes is carried out in the center of a base of the locking piece 6. [0011]

The what is called inside Futoshi cylindrical inside plug 7 with thick middle and a end face thin [ in the rear face of the zenith part 2 of the cap 1 a tip is thin, and ] protrudes downward in one. This inside plug 7 is the thing which enabled it to correspond to the difference in dimension of some of the regio-oralis inside diameter of the bottle in which this cap 1 is applied, and its about 0.5-1.5 mm is [ the difference of that narrow diameter portion and major diameter ] desirable. [0012]

When fitting into the regio oralis of a bottle, the locking piece 6 and 6-- are pushed up, and the end face 5a bends this cap 1 which becomes the above structure, and it is stuffed into the inside diameter side of the cylindrical member 5 for a pilfer-proof packaging guarantee by the mouth crowning 10 of a bottle. Subsequently, if the cap 1 is made to engage with the screw of a bottle mouth part and it rotates, the cap 1 will deepen fitting according to the lead of a screw. And the periphery of the stop projected rim 11 formed in the bottle touches the locking piece 6, and the locking piece 6 is further pushed against the cylindrical member 5 side. The side attachment walls 6a and 6a formed in each locking piece 6 are pressed by the medial surface of the cylindrical member 5, a set-up angle with the locking piece 6 is opened further, and the inner surface of the locking piece 6 almost contacts the inner diameter surface of the cylindrical member 5 (drawing 3 (a)). By this, the locking piece 6, therefore the cylindrical member 5 for a guarantee pass the stop projected rim 11 of a bottle easily, and result in the neck 12 of the undersurface. The elastic restoring force of the plastic which is the raw material restores the locking piece 6 to the neck 12 side, and the inclined form side attachment walls 6a and 6a are also restored to the original angle (drawing 3 (b)). Since the locking piece 6 has established the through-hole in the center of a base, it will follow the cylindrical member 5 at the both ends. Therefore, without the bottle mouth crowning 10 or the stop projected rim 11 carrying out strong resistance to the pressure which pushes this locking piece 6 into the cylindrical member 5, it fits in easily, and the locking piece 6 curves, and the cap 1 meets the peripheral face of the neck 12 easily. In the cap 1 which fitted in in this way, the inside \*\*--like inside plug absorbed and inserted the size error of some of the inside diameter of the mouth crowning 10 of a bottle, and has prevented liquid leakage. [0013]

If it rotates in the unstopping direction, the upper bed of the locking piece 6 will contact the undersurface of the stop projected rim 11 of a bottle, and this cap 1 which fitted into the bottle by the above will bar the rise beyond it, although this whole capping device goes up a little. In this case, the locking piece 6 prevents a rise of the cylindrical member 5 thoroughly, without not approaching the cylindrical member 5 side with the inclined form side attachment walls 6a and 6a of both ends, and those inclined form side attachment walls' 6a and 6a carrying out a rib operation, and buckling. if the cap 1 is furthermore rotated -- the connecting members 4 and 4 .. cannot bear the tensile stress, but will be cut, will leave the guarantee cylindrical member 5 to the neck 12, and the cap 1 will secede from it. [0014]

Although there were problems, such as the water injected after being filled up with fluids, such as a drink, for cooling of contents, washing of a container, etc. remaining to the base of a locking piece to a bottle, and becoming a cause of saprophytic-bacteria adhesion, Since 6 h of through-holes were established to the base of this locking piece 6 in this cap, residual water is easily dropped from 6h of the through-hole, and regains dryness early. [0015]

[Effect of the Device]

Once it is easy to fit into the package body regio oralis 10 and the cap 1 fits in, the locking piece 6 prevents a rise of the cylindrical member 5 for a guarantee in contact with the undersurface of the stop projected rim of a bottle, and this plastic cap 1 ensures cutting of a connecting member, and guarantees pilfer-proof packaging. The inside plug 7 holds a sealing state corresponding to the size error of the diameter of a bottle mouth, prevents liquid leakage, and 6 h of through-holes promote dropping of bottle wash water, and it has a operation effect holding the health nature of a bottle.

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[Translation done.]

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⑮ 考案の名称 磁気共鳴装置用試料ホルダ

⑯ 実 願 平1-70618

⑰ 出 願 平1(1989)6月16日

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## 明 細 書

### 1. 考案の名称

磁気共鳴装置用試料ホルダ

### 2. 実用新案登録請求の範囲

内部に生体を収容する試料管と、該試料管の一端に固定され、かつ前記生体を固定するための金属製シールド筒を備え、前記シールド筒内壁にその長手方向に沿って複数の長溝を形成したことを特徴とする磁気共鳴装置用試料ホルダ。

### 3. 考案の詳細な説明

#### 〔産業上の利用分野〕

本考案は、核磁気共鳴装置や電子スピン共鳴装置等の磁気共鳴装置において、例えばマウスやラット等の小動物を測定する際に使用して有効な試料ホルダの改良に関する。

#### 〔従来技術〕

近時、電子スピン共鳴装置においてマウス等の小動物を測定する場合には、特開昭58-127154号公報に記載されるようなループギャップ共振器が使用される。このループギャップ共振器

は、第3図にその概略図を示すように導電材料により形成される円筒型のループ（コイル）1と、このループを一定幅で中心軸0の方向に切り欠くことにより形成されるギャップ2とからなり、試料は中心軸0に沿ってループ内に挿入される。尚、3は全体をシールドするための金属円筒、4は共振器を同軸ケーブル5を介して外部回路と接続するためのループアンテナである。

ところで、かかる共振器（ループ1）内に小動物をガラス製試料管に収納して挿入すると、鼓動及び呼吸に基づいて小動物が振動し、それがE S R信号にノイズとなって現れる。そこで、第4図に示すように試料管6の内径と略同径の穴7を有する金属製シールド筒8を試料管の端部に固定し、このシールド筒部分に振動源となる心臓や肺部分が位置するように小動物を収納するようにした試料ホルダが提案されている。尚、前記シールド筒8の穴7の開放端はテーパ状に形成され、小動物をシールド筒から試料管へ向けて押込んだとき固定しやすいようにしてある。





〔考案が解決しようとする課題〕

このような試料ホルダにおいては、測定できる小動物の大きさはシールド筒7の穴径で決定されるため、測定できる小動物の大きさに制限があると共に、測定位置を任意に変えることがむずかしい。また、内部で小動物が動きやすく、正確な測定が行えないという問題もあった。

そこで、本考案はかかる不都合を解決することのできる試料ホルダを提供することを目的とするものである。

〔課題を解決するための手段〕

上記目的を達成するため、本考案の試料ホルダは内部に生体を収容する試料管と、該試料管の一端に固定され、かつ前記生体を固定するための金属製シールド筒を備え、前記シールド筒内壁にその長手方向に沿って複数の長溝を形成したことを特徴とするものである。

以下、本考案の実施例を図面に基づいて詳説する。

〔実施例〕

第1図は本考案に係る試料ホルダの断面図、第2図はそのAA断面図であり、第4図と同一番号のものは同一構成要素を示す。

本実施例において第4図の従来例と相違するところはシールド筒8の内壁に複数の長溝9a乃至9iをその軸心方向に沿って形成した点である。前記各長溝は内壁から外周面まで貫通するように形成してある。

このようにシールド筒に複数の長溝を形成すると小動物は軟らかいため、小動物をシールド筒内に挿入した際、第2図にその状態を示すように小動物Sの外周部が各長溝内に食い込む。そのため、小動物を動かないように固定することが可能となり、また、食い込んだぶんだけ大きなものをシールド筒に挿入することができる。また、食い込ませた状態で小動物を試料ホルダの軸方向に移動させることができるため、測定位置を任意に選ぶことができる。

尚、前述の説明は本考案の一例であり、実施にあたっては幾多の変形が考えられる。例えば上記



実施例ではシールド筒内壁に形成した長溝は外周面まで貫通させたが、必ずしも貫通させる必要はない。

〔効果〕

以上詳述したように本考案によれば、簡単な構成により従来の試料ホルダに比べ確実に固定することができ、また、より大きな生体を測定できると共に、測定位置を任意に変化させることができる。

4. 図面の簡単な説明

第1図は本考案に係る試料ホルダの断面図、第2図はそのA-A断面図、第3図はループギャップ共振器を説明するための斜視図、第4図は従来の試料ホルダを示す斜視図である。

- |                 |             |
|-----------------|-------------|
| 1 : ループ         | 2 : ギャップ    |
| 3 : 金属円筒        | 4 : ループアンテナ |
| 5 : 同軸ケーブル      | 6 : 試料管     |
| 7 : 穴           | 8 : シールド筒   |
| 9 a 乃至 9 i : 長溝 |             |

図 1

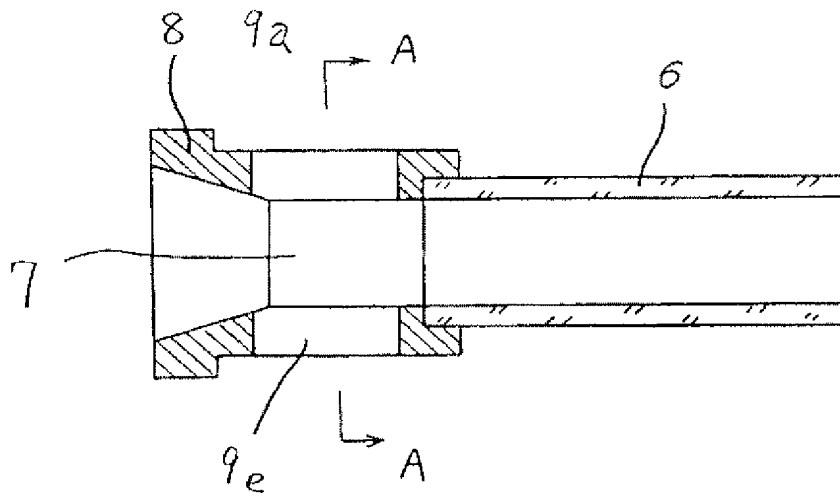
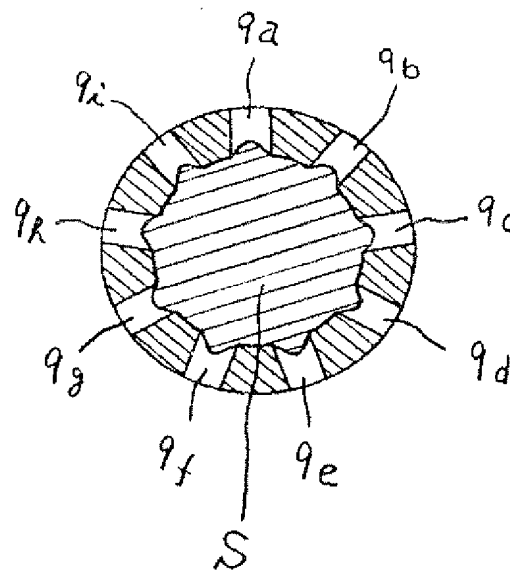


図 2



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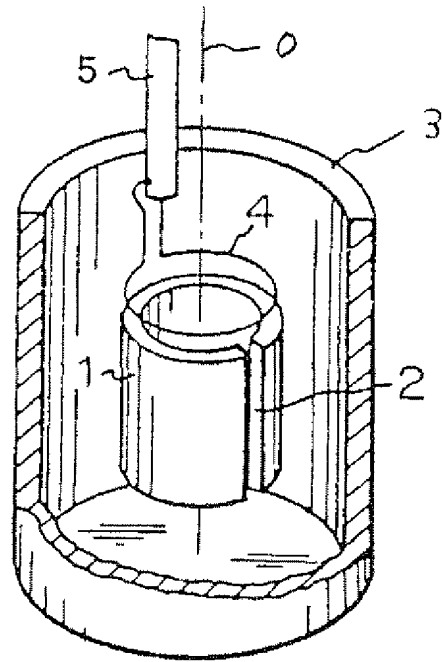


図 3

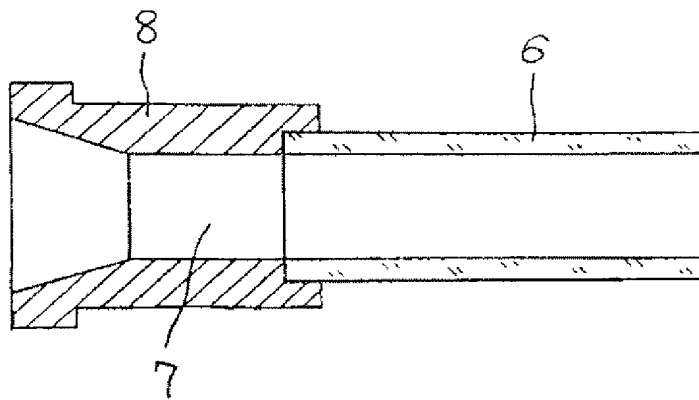


図 4

1035

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